



Technical Committee 184: Industrial automation systems and integration
Subcommittee 4: Industrial data

TC 184/SC4 N1193

2001-08-02

ISO CD Ballot Results
for ISO 18629-001
Process Specification Language

The ballot was circulated among SC4 members for its vote on 2001-03-26. 9 of our 18 P-members responded to the ballot:

| COUNTRY | VOTE | COMMENTS |
|----------------|-------------|-----------------|
| Australia | | |
| Canada | A | |
| China | | |
| Czech Republic | | |
| France | Y | Attached |
| Germany | N | |
| Italy | | |
| Japan | Y | |
| Korea | Y | |
| Netherlands | | |
| Norway | A | |
| Portugal | | |
| Russia | | |
| Spain | | |
| Sweden | A | |
| Switzerland | | |
| United Kingdom | Y | Attached |
| United States | Y | Attached |

The SC4 Secretary has reviewed the ballot responses and in consultation with the Chair has decided that

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Ballot Comments

NOTE:

Some of these comment may have been scanned using Optical Character Recognition and have not been verified as 100% accurate. Please refer to the original hard copy in cases of irregularities.

France

Annex to the French vote
on ISO/CD 18629-1

France agrees to the circulation of the draft as a DIS with the following comments

ISSUE NUMBER FRA 1

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: foreword

CLASSIFICATION: EDITORIAL

DESCRIPTION: text shall be "justified"

ISSUE NUMBER FRA 2

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: Introduction

CLASSIFICATION: EDITORIAL

DESCRIPTION: text shall be "justified"

ISSUE NUMBER FRA 3

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1 - SCOPE OF ISO 18629

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: the sentence "language for the representation of the process information" is not clear enough. What do you mean by representation? The assertions in next clauses show that the term "representation" does not take the same "primitive" sense as in all other standards elaborating in SC4 (and, not only STEP, but also PLib, Oil&Gas, or MANDATE).

PROPOSED SOLUTION:

Explain what means the term "representation in this series of parts".

ISSUE NUMBER FRA 4

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1 SCOPE OF ISO 18629

CLASSIFICATION: MAJOR, TECHNICAL

The term "process information" should be strongly explained, also with examples.

PROPOSED SOLUTION:

Explain the term "process information", possibly adding examples.

ISSUE NUMBER FRA 5

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1, note 2

CLASSIFICATION: MINOR, EDITORIAL

DESCRIPTION: font size of NOTE 2 is not correct.

ISSUE NUMBER FRA 6

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1 SCOPE OF ISO 18629

CLASSIFICATION: MAJOR, TECHNICAL

The chosen limit "just for the discrete manufacturing" is explicitly mentioned without indicating why it is an important and mandatory limit. Contrarily, the continuous process seems to be easier to "describe".

This has already been made in ISO/CD 10303-231 Application Protocol (unfortunately, now cancelled).

PROPOSED SOLUTION: Could you explain, in a Note, the reasons of this limitation in the scope?

ISSUE NUMBER FRA 7

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1 SCOPE OF ISO 18629

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: the difference between "specification" and "characterization" is not clearly explained.

It should be more efficient to refer to modeling language rather than "characterization language". Once more all the standards elaborated within SC4 concern data modeling (except some standards elaborated within WG11).

PROPOSED SOLUTION:

Explain these differences more clearly in clause 1.1.

ISSUE NUMBER FRA 8

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1, note 2

CLASSIFICATION: MINOR, EDITORIAL

DESCRIPTION: wrong font size of note 2.

ISSUE NUMBER FRA 9

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1, note 2

CLASSIFICATION: MAJOR, EDITORIAL

DESCRIPTION:

Note 2 is not clear, especially, the underlying idea, within this note: "Concepts ... properties of a process, independently of specific processes, such as: tool chatter, a numerical model ...".

PROPOSED SOLUTION:

Clarify note 2.

ISSUE NUMBER FRA 10

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1, note 2

CLASSIFICATION: EDITORIAL

DESCRIPTION

Added word "a" in sentence : " : tool chatter, a numerical model, ..."

PROPOSED SOLUTION:

Remove "a" in the sentence " ...a numerical model ..."

ISSUE NUMBER FRA 11

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: clause 1, note 2

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: In note 2, we cannot exactly understand how this sentence is built: we cannot know the examples mentioned (tool chatter, numerical model capturing the dynamic behavior of a process, ...) are related to : specific process, property ...

PROPOSED SOLUTION:

Make this sentence clearer so that we can know to what idea this NOTE is supposed to be related to.

ISSUE NUMBER FRA 12
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: clause 1.2
CLASSIFICATION: MINOR, EDITORIAL
DESCRIPTION: blank missing between "standard ISO" and "18269"
ISSUE NUMBER FRA 13
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: clause 3.3.3 bi-conditional sentence
CLASSIFICATION: MINOR, EDITORIAL
DESCRIPTION: font size of NOTE not correct
ISSUE NUMBER FRA 14
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: 3.3.16 Ontology
CLASSIFICATION: MAJOR, TECHNICAL
DESCRIPTION: definition not clear enough.

PROPOSED SOLUTION:

Explain clearly if an ontology is only a structured set of related terms, or not. What is the difference between an ontology and any other structured set of related term (e.g. a statement in a program)?

Moreover, indicate whether such a structure could be build-up from a theory (as defined in clause 3.3.24).

ISSUE NUMBER FRA 15
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: 3.3.24 theory
CLASSIFICATION: MAJOR, TECHNICAL
DESCRIPTION: definition too simple considering the other PSL parts. When reading your other documents, we think "Theory" is more than a set of axioms. Basically, the purpose of a "theory" is to describe events and also forecast evolutions (whatever the parameter). This theory is certainly based on axioms, and on many other things too (language, rules ...) in order to we could make use of these "axioms", like a classical theory (sets theory, integer numbers theory, gravitational strengths theory, etc)

PROPOSED SOLUTION:

Give a more consistent definition of the term "theory".

ISSUE NUMBER FRA 16
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: 3.3.22 satisfiable
CLASSIFICATION: MAJOR, TECHNICAL
DESCRIPTION: definitions not clear at all.

PROPOSED SOLUTION:

Explain what do you mean by "there exists a model for the sentence", and of what kind of model you are talking about.

ISSUE NUMBER FRA 17
AUTHOR: Dominique MOLIN (GOSET)
CLAUSE: 4.1
CLASSIFICATION: MAJOR, TECHNICAL
DESCRIPTION: missing explanation concerning the exact meaning (in the mind of the designers of the standard) of the set of terms: "interchange language to integrate multiple process-related applications".

PROPOSED SOLUTION

Explain this sentence.

ISSUE NUMBER FRA 18

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: 4.1

CLASSIFICATION: MINOR, TECHNICAL

DESCRIPTION: It is not necessary to repeat the restriction to discrete manufacturing while talking without details the possible extension to other processes.

PROPOSED SOLUTION

Remove this restriction, or specify clearly what are those specific extensions.

ISSUE NUMBER FRA 19

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: 4.1

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: the sentence "ISO 18629 is consistent with STEP architecture" has at least to be clarified. In which aspects is ISO 18629 consistent with STEP? What are the "connections" between both standards?

PROPOSED SOLUTION

Clarify the relationships and connections between ISO 10303, ISO 13584, ISO 15531 and ISO 18629, intended at the level of the formal data models and at the implementation level (e.g. sharing of data instances).

ISSUE NUMBER FRA 20

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: 4.8

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: The first sentence doesn't have any sense is the previously introduced context which is called "language of specification of process".

What is this neutral representation of which you're talking suddenly?

Are we right if we understand that the purpose of series 2xx are to provide a kind of supplementary extensions of parts 4x for specifying more precisely a process?

When, developing and using a 2xx part is needed?

What happens when a user wants to deal with data types that have not equivalent in ISO 18629 axioms? Shall he develop a 2xx part? If yes, is a 2xx part different from an agreement between proprietary software suitable for data exchange?

Are there some other particular and software-specific extensions? If yes, when, can we use data models that already exist for exchanging process data?

PROPOSED SOLUTION:

Explain clearly what is the purpose and the content of the ISO 18629-2xx series and their intended use.

ISSUE NUMBER FRA 21

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: Annex D.3

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: How is depicted a non-definitional extension? In which formal language?

What do we do if we have to deal with a non-definitional extension?

PROPOSED SOLUTION:

Give an example of non-definitional extension.

ISSUE NUMBER FRA 22

AUTHOR: Dominique MOLIN (GOSET)

CLAUSE: Annex E

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION: what do we do if we have to deal with a non-definitional extension? What is the meaning of the isolated balloon in the figure E.1?

PROPOSED SOLUTION:

Same remarks as issue ISSUE NUMBER FRA 21.

ISSUE NUMBER FRA 23

AUTHOR: Pascal Huau (GOSET)

CLAUSE: All

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION:

ISO 18629-1 should explain how PSL shall be used between applications.

Let's consider applications A and B for which users want to share some equivalent concepts, i.e. want that application B accesses to information of A whose structure is recognised as a valid information structure for B.

What needs to be done, using PSL, to enable such a information sharing?

A first analysis shows that at least the following shall be done:

1) At implementation design time, determination of the correspondences between the constructs of application A and axioms and predicates of PSL. Such a mapping shall be done, manually, by an expert.

In order the mapping be usable by a computer, it needs to be written in an formal and interpretable language.

Idem for application B

2) At design or run time, for an "instance" of an information of A, search for the set of PSL predicates that are true for this information.

Search for the concepts of B, for which the same PSL predicates are true.

Note: for this search, the mapping for B need to be bi-directional as the search in B is from PSL predicates to B constructs.

3) At run time, for an "instance" of an information of A (let's designate it Ia), in order for B to access to this information, on the basis of the PSL predicates corresponding to this information, call in B to routines that access to the appropriate data in A, or, decoding of a file sent from A and containing the information Ia in a neutral format or in a format made public by developers of A.

PROPOSED SOLUTION:

Explicit the whole process of tasks to be done in order to use PSL technology for communication between two applications.

ISSUE NUMBER FRA 24

AUTHOR: Pascal Huau (GOSET)

CLAUSE: All

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION:

Issue FRA-23 shows that there is a need for a formal and interpretable language to describe the correspondences between tables or object types of an application and PSL axioms and predicates (in order to be able later to access to information in A from PSL predicates).

PROPOSED SOLUTION:

At a minimum, ISO 18629-1 should mention this need and possibly, ISO 18629 should specify such a language for relational databases and for objet oriented databases.

ISSUE NUMBER FRA 25

AUTHOR: Pascal Huau (GOSET)

CLAUSE: All

CLASSIFICATION: MAJOR, TECHNICAL

DESCRIPTION:

Issue FRA-23 shows that there is a need for a library of functions that, from particular PSL predicates, will

United Kingdom

see Annex UK

United States

see Annex US

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| Member body | Clause/ subclause | Paragraph/ Figure/ Table | Type of comment (general/ technical/ editorial) | Comment | Proposed change | Observations of the secretariat on each comment submitted |
|-------------|-------------------|--------------------------|--|---|---|--|
| JS | TOC | | Editorial | Table of contents is incorrect and does not follow ISO directives. | Correct it. | |
| JS | 3.3.16 | | Editorial | The form of the definition is incorrect. | Drop “a non definitional extension is” | |
| JS | 4.3.3 | 3 rd | Editorial | The paragraph does little more than restate the definitions in section 3.3. | Remove it. | |
| JS | 4.3.3 | 3 rd | Editorial | The paragraph introduces new and unnecessary terminology “also called core theories”. | Remove the phrase “also called core theories”. | |
| JS | Throughout | | Editorial | Examples do not follow ISO directives. | Capitalize “EXAMPLE” etc. See guidelines and SC4 SDs. | |
| JS | 4.3.6 | 1 st | Editorial | Form of bulleted list is awkward | Place requirements and informative information in paragraphs after the bulleted items. | |
| JS | Throughout | | Editorial | Use of “will” and “must” in statements defining requirements | Use “shall” throughout | |
| JS | Throughout | | Editorial | Font size of clause headings is incorrect | See ISO and SC4 directives. | |
| JS | 4.5.2 | | Technical | Outer core is “so generic and pervasive in ...applicability” | If this is so, then why isn't it part of the core? What is the purpose of having an inner and outer core? | |
| JS | 4.4 | | Editorial | 40 series parts listed do not correspond to part numbers in subsequent sections. Example: 4.4 says Part 43 is “Ordering” clause 4.7.3 says part 43 is Resource Roles. | Correct it. | |
| JS | 4.4 | | Editorial | Listed part numbers should be bulleted and should reference forward clauses where these parts are discussed | Correct it. | |

| Member body | Clause/ subclause | Paragraph/ Figure/ Table | Type of comment (general/ technical/ editorial) | Comment | Proposed change | Observations of the secretariat on each comment submitted |
|-------------|-------------------|--------------------------|--|---|--|--|
| Member body | Clause/ subclause | Paragraph/ Figure/ Table | Type of comment (general/ technical/ editorial) | Comment | Proposed change | Observations of the secretariat on each comment submitted |
| JS | 3.3.2 | 2 nd | Editorial | Definition of “biconditional sentence” does not have its own clause. “ | Make ‘biconditional sentence’ clause 3.3.3. | |
| JS | 3.3.2 | 2 nd | Editorial | If “biconditional sentence” needs definition then why not other logical operators? | Either remove definition or add additional. | |
| JS | 3.3.2 | 2 nd | Editorial | Definition of “biconditional sentence” unnecessarily tied to KIF. | Define without reference to KIF | |
| JS | 4.4 | 4 th | Technical | Part 22 XML mapping is not necessary if a UML mapping is specified. OMG specification for XMI specifies this mapping. | Consider not defining an independent XML mapping. | |
| JS | 4.7.4 | 2 nd | Editorial | Second sentence beginning “The major problem in this case...” not understood. | What is the purpose of this sentence? Does the phrase mean something similar to “This part addresses...” ? | |
| JS | 4.8 | 1 st | Editorial | Paragraph only restates scope | Remove it. | |
| JS | 5.1 | 1 st | Technical | Conformance requirements are not adequately specified: 1) It is unclear what is intended by “Conformant to ISO 18629” Conformant to what part? 2) In the second bullet, what is meant by “translation definitions”? 3) What is meant by a definition being consistent with PSL? 4) The claim that “two applications will be interoperable” is not substantiated. | Rewrite this clause. | |

| Member body | Clause/ subclause | Paragraph/ Figure/Table | Type of comment (general/ technical/editorial) | Comment | Proposed change | Observations of the secretariat on each comment submitted |
|-------------|-------------------|-------------------------|---|--|---|--|
| IS | 5.2 | | Technical | Substantial elaboration of the text is needed: 1) What is meant by 5.2.2 “Any extension that introduces new primitives shall be consistent with PSL core.”? 2) What are the two ways in which “ontologies interact with ISO 18629”? and what is meant by interacting with ISO 18629? | Rewrite the clause. | |
| IS | 5.3.1 | | Editorial | Clause is incomplete | Complete it. | |
| IS | 5.3.2 | | Editorial | Clause is incomplete | Complete it. | |
| IS | Annex A | 2 nd | Technical | The paragraph states” Completion of the pilot implementations will validate the breadth of the set of concepts within ISO 18629 with respect to the applications.” If this is true, then there is currently no identifiable industrial practice which this document seeks to standardize. | Reconsider paragraph or reconsider standardization. | |
| IS | Annex D | 3 rd | Editorial | 3 rd and 4 th paragraph and Example belong in a “Fundamental Principles” section, earlier in the document. | Move this text. | |

| | | |
|--|-------------------------------|-----------------------------|
| Draft no:ISO/CD 18629-001 | Project no. | DPC number:01/614006 |
| Short title: Industrial automation system and integration – Process specification language Part 1:Overview and basic principles | Commentator: Bob Young | Date:4 July 2001 |

| Clause/ Subclause | Paragraph Figure/ Table | Type of comment (General/ technical/editorial) | Comment (with rationale) | Proposed change |
|------------------------------|------------------------------------|---|--|---|
| Contents list | Figure B.1 | Editorial | Title here slightly different from that on the figure | Use plural: “why semantics” |
| Introduction | 3 | General | The first sentence implies a similarity with EXPRESS which has not been made clear. | Explain how PSL is different from EXPRESS and the relationship between the two languages |
| 3.2 | | Editorial | - ; manufacturing facilities | - manufacturing facilities |
| 3.3.2 | | General | The definition of axiomatisation is not clear. Here it is “set of axioms in a theory”. However the definition given for theory (3.3.24) is “set of axioms” | Change either the definition of axiomatisation or the definition of theory. |
| 4.3.3 | 1 | General | I don't understand what this means. This may partly be due to the problem of 3.3.2 above. | Clarify |
| 4.3.3 | 2 | General | This is a very minor comment, but as it is this paragraph sounds very negative. | The purpose of the PSL-Core is to provide the axioms of the set of intuitive semantic primitives that are adequate and necessary to describe the fundamental concepts of manufacturing processes. This characterisation of basic processes makes few assumptions about their nature and hence provides limited logical expressiveness. The definitions of auxiliary notions that become necessary to describe all intuitions about manufacturing processes are provided through extensions to the PSL-Core. |
| 4.3.3 | 3 | Editorial | The word ‘introduce’ should be plural | ‘.. that introduces new ..’ |

| Clause/ Subclause | Paragraph Figure/ Table | Type of comment (General/ technical/editorial) | Comment (with rationale) | Proposed change |
|----------------------|----------------------------|--|--|--|
| 4.3.3 | 4 | General | The phrase in brackets “(also called PSL-Core theories)” is confusing. | Delete the phrase “(also called PSL-Core theories)”. The phrase “Non-definitional extensions” has been defined so use it exclusively. |
| 4.3.3 | 6 | Editorial | There is a grammatical problem with “there may be an extension of that turn..” I’m not sure exactly what you are trying to say so my proposal may well be wrong | There may be an extension that turns a discrete timeline into axioms and another extension which turns a dense timeline into axioms; although .. |
| 5.2.1 | 2 | General | It is not clear if the examples given are extensions or external | Clarify |
| Annex C | | Technical | It would be helpful to explain here how this relates to EXPRESS | Clarify |
| | | | | |